

when HUMCSF1PO, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:33, SEQ ID NO:34;

when HUMTPOX, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:35; SEQ ID NO:36;

when HUMTH01, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:37, SEQ ID NO:38;

when HUMvWFA31, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:39, SEQ ID NO:40, SEQ ID NO:60;

when HUMF13A01, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42;

when HUMFESFPS, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:43, SEQ ID NO:44;

when HUMBFXIII, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:45, SEQ ID NO:46;

when HUMLIPOI, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:47, SEQ ID NO:48;

when D19S253, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:50, SEQ ID NO:51; and

when D4S2368, at least one of the primers has a sequence selected from the group consisting of SEQ ID NO:56, SEQ ID NO:57.

27. The kit of claim 25, further comprising a container having reagents for at least one multiplex amplification reaction.

28. The kit of claim 25, further comprising a container having an allelic ladder.

29. The kit of claim 28, wherein each rung of the allelic ladder and at least one oligonucleotide primer for each of the loci in the set each have a label covalently attached thereto.

30. The kit of claim 29, wherein the label is a fluorescent label.

31. The kit of claim 30, wherein at least one of the oligonucleotide primers has a different fluorescent label covalently attached thereto than some of the other primer pairs in the container.

32. A method of simultaneously determining the alleles present in at least four short tandem repeat loci from one or more DNA samples, comprising:

(a) obtaining at least one DNA sample to be analyzed,

(b) selecting a set of at least four short tandem repeat loci of the DNA sample to be analyzed which can be amplified together, wherein three of the loci in the set are D7S820, D13S317, and D5S818;

(c) co-amplifying the loci in the set in a multiplex amplification reaction, wherein the product of the reaction is a mixture of amplified alleles from each of the co-amplified loci in the set; and

(d) evaluating the amplified alleles in the mixture to determine the alleles present at each of the loci analyzed in the set within the DNA sample.

33. The method of claim 32, wherein the multiplex amplification reaction is done using at least four pair of primers flanking the at least four loci analyzed.

34. The method of claim 33, additionally comprising the step of selecting pairs of primers for the multiplex amplification reaction which produce alleles from each locus that do not overlap the alleles of the other loci in the set co-amplified therein, when the alleles are separated by gel electrophoresis.

35. The method of claim 32, wherein the multiplex amplification reaction is a polymerase chain reaction.

36. The method of claim 32, wherein the amplified alleles are evaluated by comparing the amplified alleles to a size standard, wherein the size standard is selected from the group of size standards consisting of a DNA marker and a locus-specific allelic ladder.

37. The method of claim 32, wherein the amplified alleles are evaluated using polyacrylamide gel electrophoresis to separate the alleles, forming a polyacrylamide gel of separated alleles.

38. The method of claim 37, wherein the separated alleles in the polyacrylamide gel are determined by visualizing the alleles with silver stain analysis.

39. The method of claim 37, wherein primers capable of binding to a region flanking each of the loci in the set are used in co-amplifying the loci, wherein at least one of the primers used in co-amplifying each locus has a fluorescent label covalently attached thereto such that the amplified alleles produced therefrom are fluorescently labeled, and wherein the separated alleles in the polyacrylamide gel are determined by visualizing the alleles with fluorescence analysis.

40. The method of claim 39, wherein the fluorescent label is selected from the group of labels consisting of fluorescein and tetramethyl rhodamine.

41. The method of claim 6, wherein one of each of at least four pair of primers used in the multiplex amplification reaction has a fluorescent label covalently attached thereto.

42. The method of claim 41, wherein at least four of the primers used in the multiplex amplification reaction have the same fluorescent label covalently attached thereto.

43. The kit of claim 30, wherein at least four of the oligonucleotide primers have the same fluorescent label covalently attached thereto.

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